

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

**WSOU INVESTEMENTS, LLD D/B/A
BRAZOS LICENSING AND
DEVELOPMENT,**

Plaintiff,

v.

CANON, INC.,

Defendant.

6:20-cv-00980-ADA

6:20-cv-00981-ADA

6:20-cv-00982-ADA

CANON, INC.,

Third-Party Plaintiff,

v.

NXP USA, INC.,

Third-Party Defendant.

6:20-cv-00980-ADA

CANON'S OPENING CLAIM CONSTRUCTION BRIEF

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Canon, Inc. (“Canon”) herein addresses the constructions of 4 disputed claim terms present in the asserted claims of U.S. Patent No. 7,054,346 (the “’346 patent”) asserted in Civil Action No. 6:20-cv-00980, and 5 terms in U.S. Patent No. 7,116,714 (the “’714 patent”) asserted in Civil Action No. 6:20-cv-00981. Construction of the terms requested below is necessary to resolve disputes between the parties regarding the proper scope of the asserted claims.

Plaintiff is also asserting U.S. Patent No. 8,588,537 (the “’537 patent”) against Canon in Case No. 6:20-cv-00982-ADA (#982 Case). As explained to the Court during its August 16, 2021 hearing, which addressed Canon’s motion to dismiss the #982 Case, Plaintiff’s infringement allegation with respect to the ’537 patent rests solely on a feature—JPEG2000 compression—that is not present in the accused products (*i.e.*, CXDI-80C, CDXI-10 Series, and CXDI-02 Series). Because of this fundamental defect in Plaintiff’s infringement allegation, Canon cannot substantively evaluate whether there is any material dispute between the parties over the meaning of the ’537 patent claims. Accordingly, to avoid wasting the Court’s time, Canon will forego arguing claim construction of the ’537 patent terms at this time. Canon reserves its right to seek construction of terms should WSOU show the use of JPEG2000 in Canon’s accused products following the expedited discovery on this issue ordered by the court.

The ’346 patent and the ’714 patent are unrelated to one another and address separate and distinct technologies: wireless radio transmission and video encoding, respectively. Accordingly, save one issue addressed below, there is no overlap between the issues for the two patents and, as such, the brief is divided into two independent, standalone sections. Section I, which addresses the construction of the ’346 patent, begins below and Section II, which addresses the construction of the ’714 patent, begins on page 21.

As to both the '346 and '714 patents, the one common issue is that WSOU contends that no claim terms require construction and proposes “plain and ordinary meaning” for all the claim terms at issue. WSOU has also proposed alternative constructions for some terms, but, in reality, these alternative constructions only serve to highlight, rather than resolve, the parties’ disputes. Accordingly, construction is required because the parties dispute whether there is a plain and ordinary meaning for these terms and, if so, what it is. *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1361 (Fed. Cir. 2008).

I. CONSTRUCTION OF THE '346 PATENT DISPUTED TERMS

The '346 patent terms in dispute are: (1) the claim terms relating to “a time period T”; (2) the claim terms relating to the hopping sets of “N” and “F” frequencies; (3) “at least one of the selected frequencies is prohibited from subsequent selection”; and (4) “pseudorandom[ly].”

A. The '346 Patent And Its Prosecution History

The '346 patent was filed May 7, 2001, and issued on May 30, 2006. In general terms, the invention of the '346 patent relates to a system and method of “frequency hopping for communicating signals in a wireless communications system.” *See* Declaration of Richard Martinelli in Support of Canon’s Opening Claim Construction Brief (“Martinelli Dec.”) Ex. 1 (the '346 patent) at 2:37-39. Frequency hopping is a method of radio communication in which the frequency, *i.e.*, the channel, used to send signals is rapidly changed during communication. In other words, the transmitter and receiver continually hop from one channel to the next, such that any given message is spread across a number of different frequencies. This hopping from channel-to-channel can follow a pre-established pattern, *e.g.*, 1, 2, 3, 4, 1, 2, 3, 4..., or it can be patternless, which persons of ordinary skill in the art (herein after referred to as “POSITA”) refer to as pseudorandom.

The '346 patent admits that pseudorandom frequency hopping was known in the prior art, but it alleges that existing pseudorandom frequency hopping techniques have a problem because they allow frequency repetitions. *See, e.g.*, '346 patent at 1:55-59. In view of this purported problem, the '346 patent discloses a specific solution in which “[o]ver a time period T, [a] wireless endpoint performs pseudo-random selection of a frequency from a hopping set such that over at least a portion of the time period T the choice of frequencies to select from within the hopping set is constrained as a function of previously selected frequencies,” such that “prior selected frequencies are temporarily prohibited from being selected again from the hopping set.” '346 patent at 2:37-47; *see also* the Declaration of Dr. Zhi Ding in Support of Canon’s Proposed Claim Constructions (“Ding Dec.”), filed concurrently herewith, ¶¶ 28-46. In other words, during the time period T, a frequency that has been used is then prohibited from use during that same time period T.

The proper scope of the invention is established in the intrinsic evidence at every turn, as discussed in more detail below, including through: (1) admissions in the specification background; (2) the specification’s discussion of the problem to be solved; and (3) the patentee’s extensive narrowing amendments and arguments relating to the same during prosecution of the '346 patent.

a. Admissions in the '346 Patent Specification Background

The Background of the Invention section of the '346 patent specification admits that the use of pseudorandom frequency hopping in wireless systems was well known and extensively practiced in the prior art. These practices were so well known that the '346 patent explains that all wireless devices using the GSM standard were already using them advantageously: “[t]he pseudo-random frequency hopping algorithm specified in GSM provides interferer diversity and achieves long-term interference averaging.” '346 patent at 1:55-57; *see also* 1:33-36 (GSM

frequency hopping “mitigate[s] the effects of slow fading and interference,” providing “fading diversity, interferer diversity, and interference averaging”).

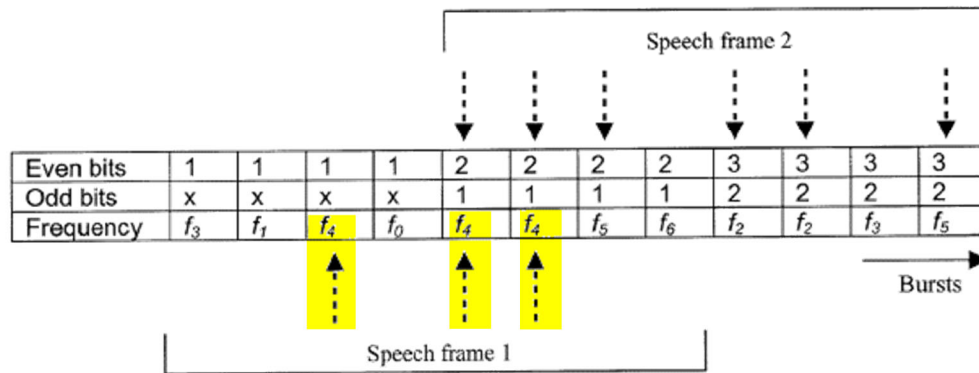
b. The '346 Patent's Problem to Be Solved

The Background of the '346 patent argues, however, that systems like those of the GSM standard were “typically non-ideal” and “not fully realized.” *Id.* at 1:37-39. The patent asserts that the “pseudo-random frequency hopping algorithm specified in GSM provides interferer diversity and achieves long-term interference averaging ***but does not guarantee fading diversity (i.e., no frequency repetitions) within the interleaving depth*** of a speech frame.”¹ *Id.* at 1:55-59. The '346 patent explains that even this lack of a “guarantee” against repetitions is not a problem much of the time because, “if a large amount of spectrum is allocated, then there are many frequencies over which users can hop and ***repeated frequencies*** over a short interval are not common.” *Id.* at 1:60-63.

However, the patent cautions that in “limited spectrum scenarios where the number of frequencies are smaller than the number of bursts,” some frequencies might be used more than once and others might not be used at all, such as the example shown in Fig. 1 in which frequency f_4 is selected three times in “Speech Frame 1” time period (each selection is highlighted in yellow) and two of the potential eight frequencies, f_2 and f_7 , are not selected at all during that frame. *Id.* at 1:63-2:9, Fig 1:

¹ Emphasis added throughout unless stated otherwise.

FIG. 1

Prior Art

According to the '346 patent, this means that when a small number of frequencies are available, “the GSM pseudo-random frequency hopping algorithm does not maximize the number of unique frequencies” used and, as a result, that hopping to the same frequency multiple times can cause “channel fading conditions” or “degradation in error performance.” *Id.* at 2:15-26.

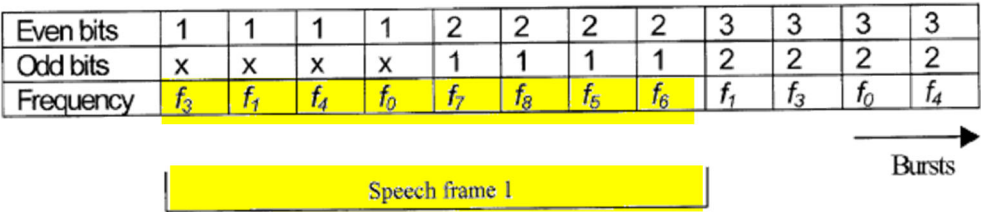
c. The '346 Patent's Solution

The '346 patent solves this specific problem by modifying a standard pseudorandom frequency hopping algorithm such that “[o]ver a time period T ... the choice of frequencies to select from within the hopping set is constrained as a function of previously selected frequencies. In particular, prior selected frequencies are temporarily prohibited from being selected again from the hopping set.” *Id.* at 2:39-46. Or to put it simply, the inventive algorithms prevented frequency repeats during a cycle to solve the frequency repetition problem identified by the inventors.

For example, “if the total number of frequencies, N, in a hopping set is equal to 4, the hopping sequence is constrained to prevent any repeats within a set of four bursts,” with the time period T, being the time it takes to execute four bursts. *Id.* at 3:38-46. Another example is

shown in Fig. 3, where now the hopping set N is 8 instead of 4. The '346 patent notes that, unlike the prior art example in Fig. 1, its algorithm serves to prevent “the repetition of any frequency over 8 consecutive bursts.” *Id.* at 3:46-52, Fig. 3 (with each of the eight unique frequencies selected once during speech frame 1 highlighted in yellow):

FIG. 3



Accordingly, the time period is the time it takes to complete 8 bursts, *e.g.*, Speech Frame 1. And the algorithm guarantees that there are no repeats of previously selected frequencies by prohibiting their use for the rest of the time period. In other words, the frequencies are prohibited from being subsequently selected for the rest of the time period ***because*** they were already selected.

FIG. 6

row 1 →	column 1 ↓					
	Burst Number	Hopping index	A	Compute Hop Frequency	H	F
	--	--	--	--	$H = \{1\ 3\ 4\ 6\ 2\ 0\ 5\ 7\}$	$F = 4$
	0	1	$A = \{1\ 3\ 4\ 6\}$	$H_{(1 \bmod 4)} = H_1 = 3$	$H = \{1\ 6\ 4\ 3\ 2\ 0\ 5\ 7\}$	$F = 3$
	1	5	$A = \{1\ 6\ 4\}$	$H_{(5 \bmod 3)} = H_2 = 4$	$H = \{1\ 6\ 4\ 3\ 2\ 0\ 5\ 7\}$	$F = 2$
	2	2	$A = \{1\ 6\}$	$H_{(2 \bmod 2)} = H_0 = 1$	$H = \{6\ 1\ 4\ 3\ 2\ 0\ 5\ 7\}$	$F = 1$
	3	4	$A = \{6\}$	$H_{(4 \bmod 1)} = H_0 = 6$	$H = \{6\ 1\ 4\ 3\ 2\ 0\ 5\ 7\}$ $H = \{2\ 0\ 5\ 7\ 6\ 1\ 4\ 3\}$	$F = 0,$ $F = 4$
	4	1	$A = \{2\ 0\ 5\ 7\}$	$H_{(1 \bmod 4)} = H_1 = 0$	$H = \{2\ 7\ 5\ 0\ 6\ 1\ 4\ 3\}$	$F = 3$
	⋮	⋮	⋮	⋮	⋮	⋮

Table Two

Fig. 6 (above) explains a detailed algorithm for carrying out the inventive concept, involving subdividing the eight (N) available frequencies (H) into two frequency sub-groups (A) of size four (F) frequencies. Before hopping occurs, an initial hopping set of H (highlighted in yellow) and variable F (highlighted in red) are shown. “In accordance with the invention,” H is the list of all available frequencies and has a “length N, where N is the total number of frequencies to hop over,” and F “is the number of frequencies in H over which the wireless endpoint is constrained to hop.” *Id.* at 3:57-65; *see also* 5:21-27, 5:42-44. At the time of burst 0, an initial subset A of the first F frequencies in hopping set H is shown, highlighted in green. In other words, A is “the set of F frequencies over which a wireless endpoint is currently allowed to hop.” *Id.* at 3:64-4:2; *see also* 5:44-46. As shown above, the first four bursts A start with the frequency subset $\{1\ 3\ 4\ 6\}$ and then changes for the next four bursts to $\{2\ 0\ 5\ 7\}$. Furthermore, within the first four hops, each time a frequency is used, it is removed from the subset A (each

highlighted in orange) and the number F is decremented (each highlighted in blue), until A is emptied and F reaches 0. *Id.* at 5:47-56.²

The time period T is the time required to select each of the available frequencies once. *See id.* at 3:38-46. Over the cycle each channel can only be selected once, as once it is selected it is prohibited from being re-selected for the rest of the cycle. Only by using a T that is equal to, or shorter than, the time period needed to select each frequency once does the algorithm avoid repeats to “achieve full fading diversity” and “maximize[] the number of unique frequencies that occur over the interleaving depth of a speech frame,” “in accordance with the invention.” *Id.* at 7:20-30. In other words, a time period T that was 10 bursts long, for example, would not make sense in a scenario where there were 8 available frequencies because a channel repeat would have to happen or the system would run out of frequencies before the time period T expired.

d. The '346 Patent Prosecution History

Throughout the prosecution of the patent, the patentee was required to narrow the claims to avoid prior art that, like the GSM standard, performed pseudorandom frequency hopping in order to limit errors like fading and interference, but only did so in purportedly “non-ideal” ways because they did not create a cyclic time period within which channels were not repeated.

The original independent claims of the '346 patent application attempted to broadly claim frequency hopping and did not include requirements that: 1) frequencies be selected pseudorandomly; or 2) previously selected frequencies be prohibited from being subsequently selected because they were previously selected. *See* Martinelli Dec. Ex. 2 (“'346 File History”) (May 7, 2001, originally filed claims). As a result, the original application claims were rejected

² This partitioning of the set H into two subsets and alternating the subsets reflects a refinement of the purported solution, which not only prohibits repeats within an 8 burst cycle, but also from one 8 burst cycle to the next, by guaranteeing that the last frequency chosen in one cycle is not pseudorandomly chosen as the first frequency of the next cycle, which would be a repeat.

over U.S. Patent No. 4,654,859 to Kung (“Kung”) and U.S. Patent No. 5,541,954 to Emi (“Emi”). *See* ’346 File History (May 20, 2004, non-final Office Action).

In response, the applicant added the requirement that the selection be “pseudorandom.” *See* ’346 File History (August 16, 2004, Amendment and Response at pp. 2-8). The applicant attempted to distinguish Kung because it “selects a frequency by cycling through an ordered frequency set in a predetermined fashion. In contrast, the present invention pseudo-randomly selects a hopping frequency.” *Id.* at p. 11. And the applicant attempted to distinguish Emi because it disclosed “a frequency hopping scheme where a receiver counts errors it has received on each given frequency. If a total error count exceeds some metric, then the received frequency will be deemed unusable and an alternative, unused frequency will be substituted in its place.” *Id.*

Despite these amendments, the independent claims were again rejected, this time over U.S. Patent No. 5,377,221 to Munday (“Munday”) and U.S. Patent No. 6,345,066 to Haartsen (“Haartsen”). *See* ’346 File History (January 7, 2005, final Office Action).

Because both Munday and Haartsen disclose pseudorandom frequency hopping (*see, e.g.,* Martinelli Dec. Ex. 3 (Munday) at 2:64-3:2; Ex. 4 (Haartsen) at 4:34-37), the applicant was required to further narrow each independent claim to require that “at least one of the selected frequencies is prohibited from subsequent selection in at least a portion of the time period T.” *See* ’346 File History (April 5, 2005, Amendment and Response at pp. 2-10). The applicant argued that “neither Munday nor Haartsen, taken separately or in combination, discloses or suggests [this claimed] prohibition on frequency selection.” *Id.* at p. 11. Instead, the applicant argued, “after a set of frequencies is selected in Munday or Haartsen any frequency within the set can be re-selected without prohibition. Said another way, neither Munday nor Haartsen *is*

prohibited from re-selecting a frequency, from a set of allowable frequencies, that has already been selected during a time period, T, as in the claims of the present invention.” *Id.* at pp. 11-12. The applicant also filed a Notice of Appeal in which it repeated the same arguments. *See* ’346 File History (April 5, 2005, Notice of Appeal at pp. 17-18).

The examiner then allowed the claims in light of the patentee’s representation that the claims require “pseudorandomly selecting frequency from a set of N (total number of frequencies available) frequencies, *where prior selected frequencies are prohibited from being selected again from the hopping set.*” *See* ’346 File History (January 13, 2006, Notice of Allowance at p. 2).

B. ’346 Patent Constructions

Canon proposes four claim terms for construction: (1) the “time period T” terms; (2) the hopping sets of “N” and “F” frequencies terms; (3) “at least one of the selected frequencies is prohibited from subsequent selection”; and (4) “pseudorandom[ly].”

a. The “Time Period T” Terms (All Asserted Claims)

<u>Canon’s Proposed Construction</u>	<u>WSOU’s Proposed Construction</u>
“T is a pre-set amount of time for one cycle of frequency hopping, which is no greater than the amount of time it would take to use each channel available for frequency hopping once,” otherwise indefinite.	Plain and ordinary meaning; or, if the court deems a construction is necessary: “a period of time T”/“[at least] a portion of the time period T”

The parties dispute whether the “time period T” terms must be limited to no greater than the time it takes to cycle all of the useable frequencies once, consistent with the embodiments that comply with the defined frequency hopping algorithms recited in the specification. When the intrinsic record as a whole is considered, the only way for the “time period T” to not be

indefinite is for the “time period T” to be construed in the context of the patent to be limited to a pre-set cyclic time period usable with the algorithm recited in the specification.

Taken in the abstract, the concept of a “time period T” does not have a definite plain and ordinary meaning to a POSITA because it is nothing more than an undefined variable. *See* Ding Dec. ¶¶ 47-49. On its own, “time period T” is an undefined variable that is inherently indefinite. *See, e.g., Howmedica Osteonics Corp. v. Zimmer, Inc.*, No. CIV. 05-897 (WHW), 2007 WL 1741763, at *6, *9 (D.N.J. June 13, 2007), *aff’d*, 397 F. App’x 654 (Fed. Cir. 2010) (finding that an “equation term is not amenable to definite interpretation” ***due to “undefined variables in the equation”***). For example, can the time period T be a nanosecond? A minute? A thousand years?

Accordingly, absent construction with reference to the specification, it would be unclear to a POSITA what arbitrary time period the patent owner might select to allege infringement. *Id.* at *9 (indefinite when POSITA “would not be able to discern whether a competitor’s similar product actually infringes”); *see also* Ding Dec. ¶ 49. If T is not defined, the patent owner might attempt to choose arbitrary and unreasonable time periods, unrelated to the algorithms of an accused product, to suit its infringement theory. For example, if certain frequencies are unavailable in certain locations (rather than being limited in time), the patent owner could—after the fact—attempt to make the unreasonable argument that the period T could be ***any*** unlimited amount of time that happens to overlap with a user’s travel from a locale where a frequency is available to one where it is not. Without a construction of the claim, absurd interpretations like this, which “fails to inform, with reasonable certainty, those skilled in the art about the scope of

the invention,” would render the claim invalid as indefinite. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014).³

In contrast, a proper and definite construction of a time period T would allow a POSITA to read the patent and understand the metes and bounds of the claim in order to avoid infringement. *See, e.g., Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1373 (Fed. Cir. 2014) (“facially subjective claim language without an objective boundary” can be definite if a specification embodiment provides “a reasonably clear and exclusive definition”); *Max Blu Techs., LLC v. Cinedigm Corp.*, No. 2:15-CV-1369-JRG, 2016 WL 3688801, at *28 (E.D. Tex. July 12, 2016) (claim term not indefinite when it is construed to be “defined by the described purpose” of the term in the specification).

In contrast to a completely unconstrained and indefinite time period T, the claims must be “read in light of the specification delineating the patent, and the prosecution history.” *Id.* A claim term that is indefinite in the abstract may be sufficiently definite if it has been sufficiently bounded by the specification and prosecution history. *See Biosig Instruments, Inc. v. Nautilus, Inc.*, 783 F.3d 1374, 1382–83 (Fed. Cir. 2015). For example, the scope of the claim term “the distance between the live electrode and common electrode” in *Nautilus* could not be greater than the width of a user’s hands, because claim 1 required detection of electrical signals at two distinct points on a user’s hand. *Id.* at 1382. And the specification bounded the other end of the meaningful distances by making clear that claimed distance could not be so small that it would “merge the live and common electrodes,” which would contradict the specification. *Id.* at 1383.

³ Absent construction, claim 11 is also invalid for an additional reason: the limitation “at least a portion of the time period T” is indefinite because it lacks an antecedent basis.

The '346 patent is similar. The claims themselves require that the time period T be no shorter than two frequency bursts, as there must be a “subsequent selection” of a second frequency for transmission during “at least a portion of the time period T.”

And the upper bound of T can only be ascertained in a definite way with reference to the specification and file history. As discussed above in Section I.A., the patentee consistently limited the claims to a specific algorithm in which a frequency cannot be repeated during one time cycle, *e.g.*, the amount of time it takes a frequency hopping system to use each channel available for frequency hopping once. This is because the intrinsic record makes clear that the invention uses the proposed prohibition algorithm to solve the purported problem of repeated channels—like those in the GSM standard—that did not “guarantee fading diversity (*i.e.*, no frequency repetitions) within the interleaving depth of a speech frame.” *See, e.g.*, '346 patent at 1:55-59.

Accordingly, the upper bound of the time period T must be no greater than the amount of time it would take to use each channel available for frequency hopping once.” If T is not so limited, the claims are indefinite because a POSITA would have no way of ascertaining any upper bound of T. *See* Ding Dec. ¶¶ 47-56.

WSOU’s “alternate” construction, which merely rearranges the words in “time period T” to be “period of time T,” has no effect on the claim scope and is not a construction at all. As such, it cannot resolve the indefiniteness issue nor can it resolve the parties’ dispute about the scope of the claim and should be rejected.

b. The Hopping Sets of “N” and “F” Frequencies (All Asserted Claims)

<u>Canon’s Proposed Construction</u>	<u>WSOU’s Proposed Construction</u>
<p>“N frequencies” / “a set of hopping frequencies” / “a hopping set” are “a pre-configured number of distinct hopping frequencies to which the hopping constraining algorithm is applied and which must not be selected more than once over the time period T,” otherwise indefinite.</p> <p>“a size of F frequencies” / “a set of F frequencies” / “a hopping set to a size of F frequencies” / “a hopping set comprising F frequencies” are “for a time period T, the number of remaining frequencies available for frequency hopping that have not been previously selected during that time period”, otherwise indefinite</p>	<p>Plain and ordinary meaning.</p>

The parties dispute whether the claimed “N” and “F” hopping frequencies terms must be construed consistent with the defined frequency hopping algorithm recited in the specification. When the intrinsic record as a whole is considered, the only way for these terms to not be indefinite is for them to be limited to the specific meanings used in the algorithms recited in the specification.

Taken in the abstract, the letters “N” and “F” are variables without a plain and ordinary meaning to a POSITA that, on their own, could mean anything and are inherently indefinite. *See* Ding Dec. ¶ 57; *see also, e.g., Howmedica*, 2007 WL 1741763, at *6, *9 (finding that an “equation term is not amenable to definite interpretation” ***due to “undefined variables in the equation”***). Moreover, the claim terms stating that “N is the total number of frequencies available for hopping” creates a circular definition that does not resolve this issue. For example, without being bounded by the specification, a POSITA has no way of knowing whether “N frequencies” could refer to: 1) all frequencies in nature; 2) all frequencies allowed by government regulations; 3) all frequencies available to a particular communications standard; 4) all frequencies currently being used for hopping according to the claimed algorithm; or some

other grouping. *See* Ding Dec. ¶ 58. Without a way to construe N, a POSITA is unable to ascertain whether a given system is, or is not, within the scope of the claims.

Accordingly, without a clear plain and ordinary meaning, the terms N and F must be interpreted as defined by the specification or they are indefinite. When read in light of the intrinsic evidence, N is “a pre-configured number of distinct hopping frequencies to which the hopping constraining algorithm is applied and which must not be selected more than once over the time period T.” N must be the pre-configured set of frequencies that is set by the hop constraining algorithm and used for a session of frequency hopping because such a pre-configured set allows tracking and prohibition of the frequencies over the time period T. N cannot be all possible frequencies allowed by nature or even all frequencies allowed by a particular wireless standard because the ’346 patent defines N as a narrower set. For example, in describing the application of its algorithm to GSM, the patent specifically explains that N is the preset group of frequencies used for hopping in a particular session. ’346 patent at 3:38-56 (N can be a smaller or larger set of the total frequencies allowed by GSM and acknowledging that the algorithm has less utility when N is a larger set).

Furthermore, as shown in Fig. 6 of the ’346 patent, the number F is, for a time period T, the number of remaining frequencies available for frequency hopping that have not been previously selected during that time period. Thus, F is a subset of N that is decremented each time a frequency is selected until it reaches 0, at which time every available frequency has been selected once during the time period T. *Id.* at 3:57-65; 5:55-60; 6:29-33; *see also* 5:21-27, 5:42-55. The ’346 patent thus provides specific definitions for N and F for use in its algorithm to accomplish cycling through every one of N available frequencies once during a time period T in order for the claimed “use of constrained frequency hopping [to] allow[] ... pseudo-random

frequency hopping to achieve full fading diversity” and “maximize[] the number of unique frequencies that occur over the interleaving depth of a speech frame,” as necessary to achieve the “ideal,” “fully realized” version of frequency hopping claimed in the ’346 patent *Id.* at 7:20-34.

During prosecution, the patentee represented that these specific meanings of the “N” and “F” frequency, and their relationship to defining the time period T, were necessary to overcome the Munday and Haartsen references. Upon adding the “at least one of the selected frequencies is prohibited from subsequent selection in at least a portion of the time period T” limitation to all independent claims, the patent owner argued that neither teaches this concept because, “after a set of frequencies is selected in Munday or Haartsen any frequency within the set can be re-selected without prohibition. Said another way, neither Munday nor Haartsen is prohibited from re-selecting a frequency, from a set of allowable frequencies, that has already been selected during a time period, T, as in the claims of the present invention.” *See* ’346 File History (April 5, 2005, Amendment and Response at pp. 2-12); *see also* ’346 File History (April 5, 2005, Notice of Appeal at pp. 17-18). Without the specific definition of “N” or “F” (and T) in the specification, this argument is meaningless because a POSITA would not know what set of frequencies the algorithm can select from during the remainder of T and which frequencies are being prohibited from selection.

Accordingly, the hopping set of “N” must be defined as “the pre-configured number of distinct hopping frequencies to which the hopping constraining algorithm is applied and which must not be selected more than once over the time period T,” and “F” as “for a time period T, the number of remaining frequencies available for frequency hopping that have not been previously selected during that time period.” If N and F are not so limited, the claims are indefinite because a POSITA would have no way of knowing what these variables mean. *See Ding Dec.* ¶¶ 57-69.

c. “At Least One of the Selected Frequencies is Prohibited from Subsequent Selection” (All Asserted Claims)

<u>Canon’s Proposed Construction</u>	<u>WSOU’s Proposed Construction</u>
“a frequency that has already been used during the time period T is prohibited from being re-used during the remainder of the time period T solely because it has been previously used”	Plain and ordinary meaning; or, if the Court deems a construction is necessary: “at least one of the selected frequencies is not allowed to be subsequently selected”

Canon’s construction properly reflects the fact that selection of a frequency for use to transmit signals by frequency hopping is the claimed *reason* that the frequency is prevented from being subsequently selected, as the patent requires for its disclosed invention to function. In contrast, WSOU’s construction broadly covers frequency prohibition occurring for any reason, including reasons, such as noise, that are unrelated to frequency’s prior use within the time period T. The intrinsic record leaves no doubt that the claims are limited to the former interpretation.

As discussed above in Section I.A, throughout the specification and prosecution history, to solve the purported problem with prior art pseudorandom frequency hopping algorithms identified by the ’346 patent, the patentee consistently limited the claims to an algorithm in which a frequency that has been used for transmission cannot be repeated during the amount of time it takes a frequency hopping system to use each channel available for frequency hopping once. According to the patentee, this was in contrast to the prior art, which did not “guarantee fading diversity (i.e., *no frequency repetitions*) within” the time period corresponding to an “interleaving depth of a speech frame.” *See, e.g.*, ’346 patent at 1:55-59.

The ’346 patent explains that, in order to achieve this goal, it is necessary to utilize an algorithm that ensures that there are no frequency repetitions: “if the total number of frequencies, N, in a hopping set is equal to 4, the hopping sequence is constrained *to prevent any*

repeats within a set of four bursts,” with the time that four bursts takes being the time period T in that example. *Id.* at 3:38-46; *see also* 3:46-52, Fig. 3 (same approach when N is equal to 8 to “prevent[] the repetition of any frequency over 8 consecutive bursts”).

With reference to Fig. 6, the patent explains that the way to prevent this repetition is to maintain F, “the number of frequencies [] over which the wireless endpoint is constrained to hop,” and decrement F each time a frequency is used, until all of the allowed frequencies have been used once and F reaches 0. *See, e.g., id.* at 3:57-65; 5:47-55.

The prosecution history of the ’346 patent confirms that the claims require prohibiting subsequent selection of a frequency solely *because* the frequency was previously used for transmission, *i.e.*, so as to prevent frequency repetition during T. For one, the patentee amended the claims to add this term in order to distinguish the Munday and Haartsen prior art references. *See* ’346 File History (April 5, 2005, Amendment and Response at pp. 2-10). In doing so, the patentee argued that neither reference teaches this limitation because, “after a set of frequencies is selected in Munday or Haartsen *any frequency within the set can be re-selected without prohibition*. Said another way, neither Munday nor Haartsen is prohibited from re-selecting a frequency, from a set of allowable frequencies, that has already been selected during a time period, T, *as in the claims of the present invention.*” *Id.* pp. 11-12; *see also* ’346 File History (April 5, 2005, Notice of Appeal at pp. 17-18). The patentee thus argued that Munday and Haartsen did not disclose the claimed invention because they allowed frequencies that were selected during a particular time period T to be selected again during that same period. In contrast, the claims require that each frequency that is selected be prohibited from selection for the remainder of T as soon as, and because, it is selected.

Additionally, the patentee expressly discussed and distinguished Emi's frequency hopping method, which prohibited channels from being used when they found to be noisy, including to "avoid interference of jamming waves near the changed hopping frequency." Martinelli Dec. Ex. 5 (Emi) at Abstract; claim 2; *see also, e.g.*, 4:59-5:3; 6:64-7:1; 8:40-45; 9:60-10:14.

This means that the claims must be further limited to prohibitions made *because* the frequency was selected for use to transmit signals, and not for other reasons like channels errors or noise. Preventing frequency repetition is the whole point of the invention of the '346 patent. WSOU's attempt to construe the claims to cover systems, like Emi, Munday, or Haartsen, that do not actively prohibit re-selection *because* of a previous selection, but instead do not re-select frequencies for other reasons, is thus improper. *See, e.g.*, Emi at 11:15-20 (prohibiting a frequency if its "errors go over a threshold at fixed time intervals," over a "number of repeated cycles of a hopping pattern," or over "each call and talk"); Munday at 5:40-44 (disclosing identifying 256 available hop channels and switching to each of them "in turn," without repeating any of them, and coincidentally not selecting any of them twice); Haartsen at 4:50-52; 6:32-35 (disclosing using a "particular wake-up hop frequency [that] preferably changes with each wake-up period" in order to "obtain resistance against jammers").

WSOU's "alternate" construction, which merely substitutes the words "not allowed" for "prohibited," has no effect on the claim scope and is not a construction at all. As such, it cannot resolve the dispute between the parties and should be rejected.

d. “Pseudorandom[ly]” (All Asserted Claims)

<u>Canon’s Proposed Construction</u>	<u>WSOU’s Proposed Construction</u>
“a selection generated by an algorithm that approximates a random selection by avoiding a regular pattern of selections when the algorithm is used repeatedly”	Plain and ordinary meaning; or, if the Court deems a construction is necessary: “appears to be patternless”

The parties dispute whether pseudorandom frequency hopping must employ a pseudorandom algorithm or may be anything that the patent owner can argue “appears” to be patternless. A review of both the intrinsic and extrinsic evidence makes clear that the frequency selections made during a frequency hopping session must be generated by an algorithm that actually creates no regular pattern. In contrast, a selection that merely “appears” to be patternless would clearly encompass subject matter that is not “pseudorandom,” such as the selection of a single number, which might “appear” patternless because one selection cannot form a pattern. A few selections that are part of a larger pattern might also “appear” patternless but not be. For example, while the string of digits 076923 alone might “appear” random, it is created by dividing 1 by 13, which is 0.076923076923..., where the digits 076923 repeat forever—a clear pattern. One divided by 13 is not a pseudorandom algorithm. *See* Ding Dec. ¶ 73.

As discussed above in Section I.A, the specification and prosecution history repeatedly explain that the invention is limited to a specific algorithm in which a series of pseudorandom frequency selections are made. The applicant amended the claims to require “pseudorandom” selection and argued that Kung “teaches away” from pseudorandom selection “by cycling through an ordered frequency set in a predetermined fashion,” as did Emi for substituting out frequencies with high error counts. *See* ’346 File History (August 16, 2004, Amendment and Response at pp. 2-8, 11). The patentee explained that systems that merely “appear” to be

patternless, as Emi’s substitutions based on on-the-fly error counts are and two selections in Kung appear in isolation to be, are not claimed.

The extrinsic evidence also supports Canon’s construction. For example, contemporaneous dictionaries that define “pseudorandom” corroborate the ’346 patent’s explanation that a pseudorandom selection is an active selection that is made as part of *a definite process (an algorithm) that avoids a pattern by design*, and one that merely “appears” random. *See* Martinelli Dec. Ex. 6 (American Heritage College Dictionary (2000)) (“pseudorandom” is “of, relating to, or being random numbers generated by a definite nonrandom computational process”); Ex. 7 (Webster’s II New College Dictionary (2001)) (“pseudorandom” is “of, pertaining to, or being random numbers generated by a definite, nonrandom computational process”). The dictionaries also define “random” as something that *actually* lacks a pattern and not merely *appears* to lack one. *See id.* (“random” is “having no specific pattern, purpose, or objective” (American Heritage)) and “having no specific pattern, purpose, organization, or structure” (Webster’s).

In short, the claimed pseudorandom frequency must be generated by an algorithm that approximates a random selection by avoiding a regular pattern of selections when the algorithm is used repeatedly and cannot be some snippet of numbers that “appear” to be patternless and is produced by an algorithm that is not pseudorandom. *See* Ding Dec. ¶¶71-79.

II. CONSTRUCTION OF THE ’714 PATENT DISPUTED TERMS

The ’714 patent terms in dispute are: (1) “a corresponding temporally predicted second encoded representation”; (2) the claim terms relating to contextual preambles; (3) “the encoder is arranged to transmit”; (4) “temporally prior”; and (5) “said other picture.”

A. The '714 Patent and its Prosecution History

The '714 patent is entitled and relates to “Video Coding.” As reflected in the Background of the '714 patent, the field of video coding was well-established and crowded by the August 14, 2000 priority date of the patent.⁴ Martinelli Dec. Ex. 8 ('714 patent) at 1:10-3:59. Within this crowded field, the '714 patent focuses on issues that arise when encoded video is transmitted and attempts to improve on transmission efficiency and error resilience. '714 patent at 3:63-4:67.

a. **Admissions in the Background of the '714 Patent**

The '714 patent introduces digital video (*e.g.*, a data file or transmitted bitstream) as a series of still frames. '714 patent at 1:10-11. It is well-known in the art—and admitted in the background of the '714 patent—that “video compression methods typically differentiate between pictures that utilise temporal redundancy reduction and those that do not.” '714 patent at 1:35-37. As the '714 patent admits in its Background:

Compressed pictures that do not utilise temporal redundancy reduction methods are usually called **INTRA or I-frames or I-pictures**. Temporally predicted images are usually forwardly predicted from a picture occurring before the current picture and are called **INTER or P-frames or P-pictures**. ... INTER pictures may contain INTRA-coded areas.

'714 patent at 1:37-45. In other words, *temporal redundancy* leverages features in one frame of video that are likely to be repeated across multiple subsequent frames. *Spectral and spatial redundancy*, on the other hand, results from the similarity between neighboring pixels within a picture.

⁴ The U.S. application for the '714 patent was filed on August 9, 2001 and claims priority to United Kingdom Application No. GB0019983.6, filed on August 14, 2000.

The '714 patent characterizes compressed videos as a sequence of pictures that can be categorized as either temporally independent INTRA pictures or temporally differentially coded INTER pictures. '714 patent at 1:64-67. For example, as is typical in the art, the first picture of a scene or a scene cut is typically INTRA-coded because there are no similar prior pictures on which it can depend. '714 patent at 2:4-9. I-frames have the advantage of being self-contained and, therefore, easier to encode and decode. But they result in larger files sizes that require more transmission bandwidth and less efficiency. '714 patent at 1:67-2:3. The '714 patent further describes that it was well-known to INTER code in the form of P-frames, which depend on a preceding frame, and/or in the form of “B-pictures or B frames,” which depend on a preceding frame and/or a subsequent frame, to improve compression performance. '714 patent at 1:10-64.

b. The Problem to be Solved by the '714 Patent

The '714 patent asserts that “[c]ompressed video [that includes both INTRA and INTER frames] is easily corrupted by transmission errors.” '714 patent at 2:13-14. The '714 patent further asserts that, because the size of I-frames tend to be significantly larger than P-frames, it is more likely than an error would occur in the transmission of a given I-frame compared to a given P-frame (*i.e.*, because an I-frame has more data there are more chances for a random error to occur when transmitting the I-frame data). '714 patent at 2:34-37. The patent notes that once an error occurs, it is easily visible in all subsequent frames which depend on the erroneous frame until the next INTRA-coded frame is successfully decoded. '714 patent at 2:14-21.

c. The '714 Patent's Solution

The purported invention of the '714 patent is intended to mitigate the above issues by creating an encoded video that redundantly encodes two versions of a frame—one using INTRA

encoding and the other using INTER encoding so that depending on the circumstances one or the other can be used, for example, to minimize corruption in the transmission. '714 patent at 4:5-9.

Figure 5 (below) depicts the output of the encoder contemplated by the '714 patent in which frames 0 and 4 are encoded both as INTRA picture (*e.g.*, I4 and I0) and INTER picture (*e.g.*, P4 and P0). '714 patent at 8:30-39. According to the '714 patent, this “protect[s] I0 and I4 from transmission errors” by providing a backup redundant version of the frame in P0 and P4.” '714 patent at 8:30-39; 8:46-47. As shown by the arrows, in this example, P0 is an INTER frame that is depends on subsequent picture 4.

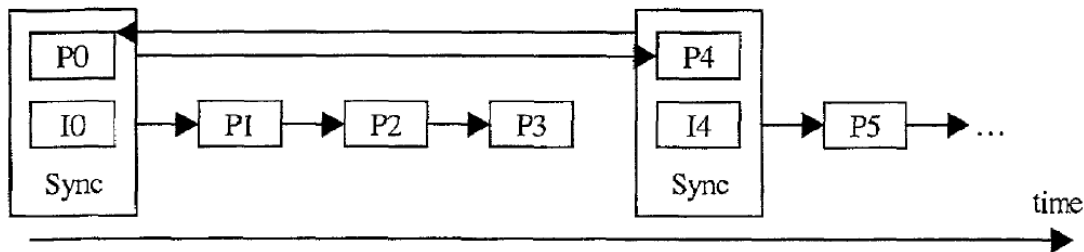


Fig. 5

The '714 patent describes the beneficial use of these redundant frames as follows. When I4 is successfully received, the decoder decodes I4 without reference to any other frame. '714 patent at 9:48-49. P4 is received **and ignored** because picture 4 has already been decoded. '714 patent at 9:49-51. When P0 is received, the decoder determines whether picture 0 has been successfully decoded using I0; if not, P0 is used to decode picture 0. This allows the buffered frames that depended on picture 0 (*i.e.*, buffered frames P1, P2, and P3) to be decoded. '714 patent at 9:51-61. This provides a benefit over a system that does not use the '714 patent's redundant P0 frame, which in the event of an error in the I0 transmission would either have to use extra bandwidth to request retransmission of the I0 frame or display visibly erroneous frame for picture 0 and for pictures 1-3, which were INTER coded based on picture 0.

Thus, according to the '714 patent, “[t]he invention enables INTRA picture recovery at a decoder even if the original INTRA picture is lost or corrupted. Interaction between the transmitter and the receiver is not needed to recover the INTRA picture.” ’714 patent at 4:10-13.

d. The '714 Patent Prosecution History

The patentee relied on exactly these benefits to obtain allowance of the '714 patent during prosecution before the U.S. Patent Office. Specifically, the applicant distinguished prior art that, like many conventional encoders, could encode any arbitrary frame of a video as an I, P, or B frames, but which in creating a particular encoded video “utilize[d] only a single encoding mode” for frame in the resulting encoded video. Martinelli Dec. Ex. 9 ('714 File History) (July 15, 2005, Amendment and Response at pp. 15-16). The applicant characterized this as being “in contrast to the claimed invention which provides for encoding of a picture ... with first and second encoding modes” in a single video as taught in the specification. *Id.* In other words, the applicant clarified that the claimed solution of the '714 patent did not broadly encompass encoders that could create I, P, and B frames. In response, the examiner maintained both the anticipation and obviousness rejections. *Id.* (September 30, 2005, final Office Action at pp. 2-8).

B. Argument - '714 Patent Constructions

Canon proposes five claim terms for construction:⁵ (1) “a corresponding temporally predicted second encoded representation”; (2) the claim terms relating to contextual preambles; (3) “the encoder is arranged to transmit”; (4) “temporally prior”; and (5) “said other picture.”

⁵ Canon understands that the Court is very familiar with the law of claim construction and so omits a discussion of the same.

a. The “Corresponding Temporally Predicted Second Encoded Representation” Terms (All Asserted Claims)

<u>Canon’s Proposed Construction</u>	<u>WSOU’s Proposed Construction</u>
“a temporally predicted second encoded representation of the first picture that is associated with the first encoded representation of the first picture by including both encoded representations in a single encoded video”	Plain and ordinary meaning OR “a corresponding second encoded representation produced using another picture as a reference”

The parties dispute whether “a corresponding temporally predicted second encoded representation” can be read so broadly as to encompass any time a single picture happens to be encoded as an INTRA frame and an INTER frame, even if each of the resulting encodings is provided in a completely independent and unrelated video that has no operative relationship with the other video. When the intrinsic and extrinsic evidence as a whole is considered, it cannot be.

The claims cannot be read so broadly that they cover *any* two encodings of the first picture—regardless of their relationship—because it would improperly read the term “corresponding” out of the claim. The claim language requires:

encoding the first picture ... using a first encoding mode... to form
a first encoded representation of the first picture

encoding said first picture ... using a second encoding mode... to
produce a *corresponding* temporally predicted second encoded
representation of the first picture

If the word “corresponding” was deleted (as shown below) the claim language would still require a first and second encoding of the first picture.

encoding the first picture ... using a first encoding mode... to form
a first encoded representation of the first picture

encoding said first picture ... using a second encoding mode... to produce a _____ temporally predicted second encoded representation of the first picture

Thus, to give the claim meaning, the specific nature of the claimed “corresponding” must be construed. The intrinsic record clearly specifies the claimed “corresponding”.⁶

The ’714 patent expressly states that “[t]he *invention* enables INTRA picture recovery at a decoder even if the original INTRA picture is lost or corrupted.” ’714 patent at 4:10-12. *See Forest Lab’ys, LLC v. Sigmapharm Lab’ys, LLC*, 918 F.3d 928, 933 (Fed. Cir. 2019) (“When a patent ... describes the features of the ‘present invention’ as a whole, this description limits the scope of the invention.”) (quoting *Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1308 (Fed. Cir. 2007)). In other words, the ’714 patent is directed to solving the specific problem of transmission corruption:

The invention is applicable to any video coding protocol using temporal prediction. *The addition of additional INTER frames corresponding to INTRA frames* as discussed above introduces error resilience *into the encoded signal* and allows a receiving decoder to select alternative decoding options if part of the received signal is corrupted.

’714 patent at 12:55-61, *see also* 12:30-38 (also describing an advantage for advanced playback controls using the claimed system).

Consistent with this objective, Fig. 5 of the ’714 patent illustrates a single transmission stream that includes at least one picture encoded by using both encoding modes sent to a decoder for error correction. As discussed above in Section II, Fig. 5 illustrates the specific solution to

⁶ Moreover, the nature of the claimed “corresponding” must be construed because “corresponding” is a relative term that does not have a definite plain and ordinary meaning to a person of ordinary skill in the art outside the context of a particular disclosure. As such, WSOU’s construction “fails to inform, with reasonable certainty, those skilled in the art about the scope of the invention” and render the claims invalid. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014).

protect picture 0 or 4 from transmission errors by producing and transmitting both a first representation of the picture (*i.e.*, I0 or I4) and a second representation of the same picture (*i.e.*, P0 or P4).

It is this correspondence between the first encoding and the second encoding that is captured by Canon's proposed construction requirement of "including both encoded representations in a single encoded video," thereby supporting the purported error resilience benefit of "the invention." The '714 patent similarly uses "corresponding" to describe the error resiliency relationship of the encoding modes: "The addition of additional INTER frames **corresponding** to INTRA frames as discussed above introduces error resilience into the encoded signal and allows a receiving decoder to select alternative decoding options if part of the received signal is corrupted." '714 patent at 12:55-61.

Indeed, the patentee expressly distinguished a prior art reference, Ueda, that had the ability to encode a picture in either INTRA and INTER modes. To overcome this reference, the patentee clearly and expressly argued that the claimed encoding must correspond to one another by being in a single encoded video:

*Each of the independent claims 1 and 6-15 recites, inter alia, substantively the encoding of a video signal representing a sequence of pictures **to form an encoded video signal** from a first picture or a part thereof using a first encoding mode **and** encoding the first picture or the part thereof using a second encoding mode with reference to another picture of the sequence **to produce the corresponding** temporally predicted second encoded representation of the first picture or the part thereof. **This subject matter has no counterpart in Ueda.***

'714 File History (July 15, 2005, Amendment and Response at p. 15). Thus, the patentee expressly emphasized that the relevant correspondence between the first and second encoding is

that they are part of a single encoded video, which would provide the picture recovery benefits of the invention.

In contrast, WSOU’s “alternate” construction, which only defines “temporally predicted,” has no effect on the claim scope and is not a construction at all. Indeed, WSOU’s alternate construction is redundant and confusing. All the asserted independent claims already recite that the second encoding mode is done “with reference to another picture of the sequence.” Adopting WSOU’s alternate construction, shown in brackets below, for example, would read: “using a second encoding mode, *with reference to another picture* of the sequence to produce [a corresponding second encoded representation produced using another picture as reference].” This construction not only fails to offer additional clarity, but also adds needless language to well-understood portions of the claim, which is superfluous and undesired. *See Mformation Techs., Inc. v. Research in Motion Ltd.*, 764 F.3d 1392, 1399 (Fed. Cir. 2014) (favoring a construction that does not render another limitation “*superfluous*”) (citing *Aristocrat Techs. Australia Pty Ltd. v. Int’l Game Tech.*, 709 F.3d 1348, 1356–57 (Fed. Cir. 2013)).

Accordingly, the claimed “corresponding” must be defined as some operative relationship between the two encoding modes that does not merely cover two independent encodings. Canon’s proposed construction accurately captures this relationship while WSOU’s alternate construction only repeats the term, defines well-known temporal encodings, and fails to resolve the scope of the claim. Therefore, WSOU’s proposed construction should be rejected.

b. The Contextual Preambles: “A video codec” (Claims 7, 13), “A multimedia system” (Claims 8, 13), “A portable electronic device” (Claim 12)

<u>Preamble Term</u>	<u>Canon’s Proposed Construction</u>	<u>WSOU’s Proposed Construction</u>
“A video codec” (Claims 7, 13)	Preamble is not limiting.	Plain and ordinary meaning OR “software or hardware component/module that encodes and/or decodes video data”
“A multimedia system” (Claims 8, 13),	Preamble is not limiting.	Plain and ordinary meaning OR “A system that is capable of processing data such as text, audio, images, videos, etc.”
“A portable electronic device” (Claim 12)	Preamble is not limiting.	Plain and ordinary meaning OR “A device that can be easily moved”

The parties dispute whether various preambles of selected independent claims are limiting. When the intrinsic and extrinsic evidence as a whole is considered, they are not.

It is a well-understood presumption that the preamble does not limit the claims. *Am. Med. Sys., Inc. v. Biolitec, Inc.*, 618 F.3d 1354, 1358 (Fed. Cir. 2010). But, “[i]n general, a preamble limits the invention if it recites essential structure or steps, or if it is ‘necessary to give life, meaning, and vitality’ to the claim.” *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002). “Conversely, a preamble is not limiting ‘where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention.’” *Id.*, 289 F.3d at 808; *see also Acceleration Bay, LLC*

v. Activision Blizzard Inc., 908 F.3d 765, 769–71 (Fed. Cir. 2018) (in a preamble reciting “[a] computer network for providing an information delivery service for a plurality of participants,” finding “information delivery service” to be non-limiting because it “merely describe[s] intended uses for what is otherwise a structurally complete invention”); *see also Arbor Glob. Strategies LLC v. Samsung Elecs. Co.*, No. 2:19-CV-00333-JRG, 2020 WL 7074877, at *11 (E.D. Tex. Dec. 3, 2020) (finding “processor module,” in the preambles of the claims not limiting and reasoning “characterizations of the claimed inventions and these disclosures regarding what the claimed inventions ‘relate[] to’ do not justify departing from the usual principle that when the preamble does not provide antecedent basis and is merely ‘descriptive’ of the limitations set forth in the body of the claim, the preamble is not limiting.”).

The Federal Circuit has provided “guideposts” to determine whether the preamble should be limiting: (1) preamble provides antecedent basis, (2) preamble is essential to understand limitations or terms in the claim body, (3) preamble recites “additional structure or steps underscored as important by the specification,” and (4) a “clear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art.” *Catalina*, 289 F.3d at 808-09.

Neither of “a video codec,” “a multimedia system,” nor “a portable electronic device” provides antecedent basis for any term in the claim bodies. Similarly, these terms are not essential to understand limitations in the claim body and there was no clear reliance on them during prosecution to distinguish the claimed invention from the prior art. And these short preambles do not recite additional structure underscored as important by the specification. In fact, the specification confirms that “the invention is concerned with *the operation* of the video codec” to abandon additional details of hardware. ’714 patent at 5:54-57, 4:65-67.

Just as this Court has previously found similar preambles not-limiting, each of these preambles “merely gives a descriptive name to the set of limitations in the body of the claim that completely set forth the invention.” *MV3 Partners LLC v. Roku, Inc.*, WDTX-6-18-cv-00308, Dkt. 90, p. 8 (quoting *IMS Tech., Inc. v. Hass Automation, Inc.*, 206 F.3d 1422, 1434 (Fed. Cir. 2000)); *NCS Multistage Inc. v. TCO Products Inc. et al.*, WDTX-6-20-cv-00622, Dkt. 94, pp. 8-9. For example, in *MV3 Partners*, this Court found that each of the claim limitations [that included the preamble] were depicted in Figure 4 and previously explained. *MV3 Partners LLC*, WDTX-6-18-cv-00308, Dkt. 90, p. 8. This Court also noted that the patentee did not clearly rely on the preamble to support the validity and/or amend the preamble to traverse a rejection. *Id.* Despite the use of the term in both the preamble and the body of the claim, this Court nevertheless found that “the presence of ‘mobile set top box’ in the preambles of [the claims] does not provide an important characteristic of the claimed invention” and concluded that the preamble is not limiting. *Id.* at pp. 8-9.

This case is even clearer than *MV3 Partners* because there is no use of each term in the preamble and the body of the claim. *See Alexsam Inc v. Cigna Corporation*, No. 220-CV-00081-JRG-RSP, 2021 WL 1561606, at *7 (E.D. Tex. Apr. 20, 2021) (finding the term “multifunction card system,” which appears in only the preamble of Claim 32, as not limiting and reasoning that “[i]n short, this is not a case in which the patentee ‘use[d] both the preamble and the body to define the subject matter of the claimed invention.’”). But like *MV3 Partners*, the claim limitations in each independent claim body is depicted, for example, in Fig. 5 of the ’714 patent and described above. In other words, the presence of the “video codec,” the “multimedia system,” and the “portable electronic device” does not provide an important characteristic of the claimed invention and should not be limiting. *See also NCS Multistage Inc. v. TCO Products*

Inc. et al., WDTX-6-20-cv-00622, Dkt. 94, p. 9 (finding “[a] float tool...” preamble not limiting, reasoning that there was no reliance in the body of the claims on the preambles and “by [Defendant’s] own test, in the opinion of the court, deleting the preamble would not render the body of the claims nonsensical.”); *cf. WSOU Investments LLC d/b/a Brazos Licensing and Development v. Google LLC f/k/a Google Inc.*, WDTX-6-20-cv-00573, Dkt. 43, p. 92 (finding a preamble limiting where Defendants argued that “the specification of this patent is replete with references to [the phrase,]... is the title of the invention[,], the first sentence of the abstract[,], the summary of every embodiment[,], and that] there is no embodiment that does not involve [the phrase].”).

Because the preambles in this case do not provide antecedent basis for any terms in the body of the claim, are not essential to understanding the claim’s limitations—which are all directed to the encoding methods, and were not relied on during prosecution to distinguish any prior art, these preambles lack the hallmarks of a limiting preamble under Federal Circuit precedent and should be found not-limiting.

c. “The Encoder Is Arranged To Transmit” (Claim 31)

<u>Canon’s Proposed Construction</u>	<u>WSOU’s Proposed Construction</u>
“circuitry of the encoder causes transmission to a decoder both locally and over a network” OR Indefinite.	Plain and ordinary meaning OR “the encoder is configured to transmit”

The parties dispute whether “the encoder is arranged to transmit” requires the encoder to include component parts to transmit or whether the encoder only needs to effect the transmission. When the intrinsic and extrinsic evidence as a whole is considered, without the component parts to effect the transmission, the claim is unclear to a POSITA.

As previously described, the specification confirms that “the invention is concerned with *the operation* of the video codec” and ignores additional details of conventional hardware. ’714 patent at 5:54-57. It is unclear then whether the patent owner can arbitrarily label an encoder and a wireless transmitter as the claimed encoder to claim infringement. Does the encoder need to send a control signal to the transmitter via a controller?

WSOU’s proposed construction, which merely replaces the word “arranged” with “configured”, does not clarify this issue, has almost no effect on the claim scope, and is not a construction of a term at all. As such, it cannot resolve the indefiniteness issue and should be rejected.

d. “Temporally Prior” (Claim 3)

<u>Canon’s Proposed Construction</u>	<u>WSOU’s Proposed Construction</u>
Indefinite.	Plain and ordinary meaning OR “preceding in time”

The parties dispute whether “temporally prior” can be clearly understood in the context of the claim by a POSITA. When the intrinsic and extrinsic evidence as a whole is considered, it cannot be.

Out of context, the term “temporally prior” is a relative term that needs to be defined in terms of a specific relationship. In other words, a POSITA needs more information to understand if A is “temporally prior” to B. And the plain language of the claim does not clarify the issue. Specifically, claim 3 recites that the first picture “is encoded with reference to another picture occurring in the sequence temporally prior to said first picture.” However, does

“occurring in the sequence” refer to the sequence of transmission, the sequence the frames were encoded, or sequence of the original input video stream?

WSOU’s construction offers no additional clarity on whether the “another picture” must occur in the sequence temporally prior (or preceding in time) to the first picture as the sequence is transmitted, as the frames are being encoded, or the sequence of the original input video stream. The Specification offers no guidance here. WSOU’s construction does not resolve the indefiniteness issue and should be rejected.

e. “Said Other Picture” (Claims 29, 32)

<u>Canon’s Proposed Construction</u>	<u>WSOU’s Proposed Construction</u>
<p>“said another picture”</p> <p>OR</p> <p>Indefinite.</p>	<p>Plain and ordinary meaning</p> <p>OR</p> <p>“the other picture”</p>

The parties dispute whether “said other picture” finds antecedent basis from claim 6, from which claims 29 and 32 depend. When the intrinsic and extrinsic evidence as a whole is considered, it does not and, thus, the claim term is indefinite.

Claims 29 and 32 each depend from independent claim 6. None of these claims introduce any “other picture” and, therefore, the reference to “the other picture” is unclear. Despite this confusion, WSOU does not correct the issue and interchangeably refers to “said other picture” as “the other picture.” Without the introduction of “an other picture” anywhere in the claims, WSOU’s proposed construction is faulty and should be rejected.

III. CONCLUSION

Canon respectfully requests that the Court adopt its proposed constructions.

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Respectfully Submitted

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CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing document was served or delivered electronically to all counsel of record on the 23rd day of August, 2021.

/s/ John M. Jackson

John M. Jackson